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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,002	12/14/2001	Robert P. Bourdelais	83613AEK	1246

7590

08/13/2003

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EXAMINER

PATTERSON, MARC A

ART UNIT

PAPER NUMBER

1772

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/017,002	BOURDELAIS ET AL.	
	Examiner	Art Unit	
	Marc A Patterson	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 32-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species of the claimed invention:

- i. A light diffuser (Claims 1 – 31).
- ii. A back lighted imaging media (Claim 32).
- iii. A liquid crystal device (Claims 33 – 34).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, Claim 1 is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the

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examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

2. During a telephone conversation with Mr. Arthur Kluegel on July 31, 2003 a provisional election was made with traverse to prosecute the invention of i, claims 1 – 31. Affirmation of this election must be made by applicant in replying to this Office action. Claims 32 – 34 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 recites the limitation "both external layers" in line 2. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 19 recites the limitation "said light transmission" in line 1. There is insufficient antecedent basis for this limitation in the claim.

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6. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 20 recites the limitation "said light transmission" in line 1. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 21 recites the limitation "major axis diameter to minor axis diameter" in line 2. There is insufficient antecedent basis for this limitation in the claim.

8. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 22 recites the limitation "major axis diameter to minor axis diameter" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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10. Claims 1 – 6, 8 – 9 and 11 – 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aylward et al (U.S. Patent No. 6,017,686) in view of Harrison et al (U.S. Patent No. 5,100,862).

With regard to Claims 1 and 5, Aylward et al disclose a light diffuser for a photographic paper (column 1, lines 31 – 46; column 3, lines 25 – 51) comprising a thermoplastic layer (polyolefin; column 3, lines 59 – 67; column 4, lines 1 – 13) incorporating organic bead – containing microvoids (column 5, lines 1 – 43) and a non – voided layer on a surface thereof (column 6, lines 28 – 33), non – voided layer exhibiting an average thickness of less than 12 microns (the total thickness of the composite sheet is 12 microns (column 4, lines 42 – 49). Aylward et al fail to disclose a non – voided layer which is a smoothing layer.

Harrison et al teach that a non – voided layer on a surface of a layer containing microvoids is a smoothing layer (column 2, lines 46 – 66); the property of being a smoothing layer is therefore inherent to the Aylward et al, as it is a non – voided layer on a surface of a layer containing microvoids.

With regard to Claims 2, 6, 8 – 9, 11 and 17 – 23, Aylward et al fail to disclose a diffuser having a light transmission efficiency of at least 80% and a % light transmission of between 94 and 99.6% and a smoothing layer having a surface roughness of between 0.02 and 0.18 micrometers and a difference in refractive index between the thermoplastic and microvoids of greater than 0.2 and a layer which contains greater than 4 index of refraction changes greater than 0.20 parallel to the direction of travel of light and diffuser having an elastic modulus of greater than 500 millipascals and an impact resistance greater than 0.6 gigapascals. However, Aylward et al disclose a diffuser having a transmission of at least 40% (column 9, lines 17 – 18)

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and a smoothing layer having a surface roughness of less than 44 micrometers (the surface roughness of the cellulose paper; column 11, lines 1 – 11) and difference in refractive index between the thermoplastic and microvoids of at least a fraction of one (the microvoids contain air, as stated above) and a diffuser which contains at least 1 index of refraction change parallel to the direction of travel of light (column 8, lines 33 – 61) and a modulus ratio less than 1.4. Therefore, the light transmission efficiency, surface roughness, difference in refractive index, number of index of refraction changes and modulus would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the light transmission efficiency, surface roughness, difference in refractive index and number of index of refraction changes, since the light transmission efficiency, surface roughness, difference in refractive index, number of index of refraction changes and modulus (therefore impact resistance) would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Allen et al, in the absence of unexpected results. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

With regard to Claims 3 – 4 and 28 – 29, the smoothing layer and thermoplastic layer disclosed by Aylward et al comprises polyolefin or polyester (polyethylene or polybutylene terephthalate; column 5, lines 1 – 12)

With regard to Claims 12 – 13, the microvoids disclosed by Aylward et al are formed by organic microspheres (column 5, lines 1 – 15), therefore free of scattering inorganic particles.

With regard to Claim 14, the microspheres (therefore beads) disclosed by Aylward et al are crosslinked (column 5, lines 44 – 53)

With regard to Claim 15, the microvoids disclosed by Aylward et al contain a gas (column 4, lines 50 – 55).

With regard to Claim 16, Aylward et al disclose no surface non – uniformity; the claimed aspect of the thickness uniformity across the diffuser being less than 0.10 micrometers therefore reads on Aylward et al.

With regard to Claims 24 – 25 and 30 – 31, the microvoids disclosed by Aylward et al have an average volume between 12 and 18 cubic micrometers over an area of 1 square centimeter (the void initiating particles have a diameter of between 0.1 to 10 micrometers; column 4, line 50 – 55).

With regard to Claims 26 – 27, the light diffuser disclosed by Aylward et al has a thickness between 12.5 and 50 micrometers (column 4, lines 42 – 49).

11. Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aylward et al (U.S. Patent No. 6,017,686) in view of Harrison et al (U.S. Patent No. 5,100,862) and further in view of Bourdelais et al. (U.S. Patent No. 6,326,109).

Aylward et al disclose a photographic paper comprising a smoothing layer as discussed above. With regard to Claims 7 and 10, Aylward et al fail to disclose a smoothing layer comprising a crosslinked urethane polymer coating applied to the surface of the smoothing layer and a pressure – sensitive adhesive applied to the surface of the smoothing layer.

Bourdelais et al teach the use of a urethane coating (column 7, lines 40 – 52) at the surface of a photographic paper (column 1, lines 8 – 22) for the purpose of obtaining a paper which is protected from scratching (column 7, lines 40 – 52) and a pressure – sensitive adhesive

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for the purpose of adhering the paper to other imaging layers (column 9, lines 4 – 20). The desirability of providing for a urethane coating and pressure – sensitive adhesive in Aylward et al, which is a photographic paper, would therefore be obvious to one of ordinary skill in the art.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a urethane coating and pressure sensitive adhesive at the surface of the smoothing layer, and therefore at the outermost surface, of Aylward et al, in order to obtain a paper which is protected from scratching and to adhere the paper to other imaging layers, as taught by Bourdelais et al.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Patterson, whose telephone number is (703) 305-3537. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (703) 308-4251. FAX communications should be sent to (703) 872-9310. FAXs received after 4 P.M. will not be processed until the following business day.

Marc A. Patterson, PhD.

Marc Patterson
Art Unit 1772
HAROLD PYON
SUPERVISORY PATENT EXAMINER
*HP**8/7/03*